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ABSTRACT

Creating communities of discourse among teachers that tread the "delicate middle ground" of theory linked to actual classroom practice can serve the purpose of promoting teachers' ongoing professional development. Yet both teachers and teacher educators are navigating relatively uncharted territory in attempting to develop such communities. This paper examines some of the features of such a community of discourse, the dilemmas faced in creating and maintaining it, and poses some questions for further investigation. (Author)

Creating a Culture of Intellectual Inquiry in Teacher Inquiry Groups

James K. Hammerman

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(17th PME-NA, Columbus, OH, October 21-24, 1995)

CREATING A CULTURE OF INTELLECTUAL INQUIRY IN TEACHER INQUIRY GROUPS

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Creating communities of discourse among teachers that tread the "delicate middle ground" of theory linked to actual classroom practice can serve the purpose of promoting teachers' ongoing professional development. Yet both teachers and teacher educators are navigating relatively uncharted territory in attempting to develop such communities. This paper examines some of the features of such a community of discourse, the dilemmas faced in creating and maintaining it, and poses some questions for further investigation.

For teachers to change their mathematics teaching practice in accord with the NCTM *Standards* (1989; 1991; 1995) they must make several interrelated shifts in their knowledge, beliefs, and teaching practice. They must develop new notions about the nature of mathematics and what it means to do mathematics; new views of how students learn, based on careful listening to students' mathematical thinking; and new beliefs about what classrooms ought to look, sound and feel like, and skills in creating and managing such classrooms. (Goldsmith & Schifter, 1993/1994)

Such changes take time. They require extended investigation, inquiry, and experimentation into issues of mathematics, learning, and teaching. This learning is ongoing—there are not answers to be acquired but rather, a complex terrain of practice to be negotiated and dilemmas to be dealt with (Ball, 1994; Nussbaum, 1990). This means that teachers must not only explore new ideas in professional development programs, they must also develop habits and inhabit structures which will enable them to continue their professional development over time. One method for doing so is through participation in a community of ongoing inquiry into practice. There, teachers develop ways of talking with one another that are both supportive and critical, basing discussions of issues in practice on analysis of descriptive data of various kinds (Carini, 1975; Cochran-Smith & Lytle, 1990, 1992; Heaton & Lampert, 1993; Lord, 1994; Watt & Watt, 1991).

This culture of careful description and deep inquiry into practice is novel for most teachers. It treads a delicate middle ground between practical "idea swap" sessions and abstract, theoretical conversations ungrounded in practice—two forms of sharing that often feel more familiar to teachers. Navigating this middle ground—creating real intellectual discourse and investigation tied to the particulars of teaching practice—requires new forms of discourse, new ways for teachers to interact, new assumptions about what's important to look at, and new skills. This is a lot to accomplish. It is made even more difficult because creating and sustaining a conversation in this middle ground is also novel for us as teacher-educators. It is

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fraught with dilemmas and requires many new experiments. Yet creating this conversation is important, not only for teachers to develop new forms of practice, but also to create new roles and communities for teachers, thereby increasing teachers' voices in political and research communities. (Cochran-Smith & Lytle, 1990)

In this paper, I will describe some of what occurs in such a group to create a conversation in this middle ground. In so doing, I will also describe some of the questions that I ponder as a teacher educator in understanding and facilitating the creation of this conversation, and will suggest further questions for investigation.

Project Context and Data

"Inquiry Groups" represent one of several components of the NSF-funded Mathematics for Tomorrow project. The project works for two years at a time with school-based teams of teachers from four Boston-area school districts, as well as with principals and district-level administrators from those districts. Teachers attend an intensive two-and-a-half week institute in each of two summers to explore mathematics themselves; to attend to student thinking about mathematics through analysis of clinical interviews, the results of whole class assessments, and of teacher-written "Episodes" (Schifter et al., In Preparation); and to explore ideas and techniques for developing classroom practice through inquiry. They then meet biweekly after-school, in schools, throughout the academic year in district-based Inquiry Groups—teams of 7 to 14 people who discuss a variety of issues concerning how institute ideas play out in actual classroom practice. A staff member also consults in each teacher's classroom four times each year, and there are four day-long workshops annually for all teachers.

The quotes in this paper come from an Inquiry Group discussion that took place in March, 1995, the second year of working with this group of teachers. The author was the teacher educator/ facilitator of this group throughout these two years. In addition to the author, there were seven teacher-participants attending this session and two researchers taking field notes. The conversation was audiotaped, and a transcription was made.

Findings and Questions

In analyzing this discussion, we notice several features that are interesting because of the questions they raise about the nature of this kind of community of discourse among teachers, and what it means to create such a community. 1) It is difficult to find a focus that helps the discussion enter and stay in the middle ground of theory embedded in particulars. Even when a question is initially posed well with solid data to explore, this is a new intellectual space to be in and the conversation often needs refocusing. 2) Teachers do not use solely the shared data brought to the group. Rather, they extend this data by describing experiences from their own classrooms that either support or tend to refute what the shared data shows. 3) Generation of alternative hypotheses about the data moves the conversation towards the "middle ground" by trying to make sense of the particulars of what occurred, though this is difficult and occurs infrequently. 4) Reflection on our

own experiences in the Inquiry Group serves both as yet another data source, and as the potential basis for developing a self-reflective culture of ongoing inquiry among teachers. I will take up each of these issues in turn.

One important ongoing task for the group, in individual sessions and over the course of the year, is negotiating a focus for discussions. This task is important because it serves to frame the conversation within the balance of theory and practice that is necessary for critical colleagueship. Helping the group find this balance and develop criteria for deciding on what is more likely to produce this balance is a crucial task of my job as the teacher educator. This is not easy. In part, it represents a new intellectual space for teachers (and many teacher educators)—one which we can only really come to know by experiencing, but which we can only experience as we create it together in the group.

A lot of effort went into framing discussions well. The usual procedure was for a teacher (or pair of teachers) to take responsibility each time for bringing some data from her classroom and a question or set of questions to launch and focus the discussion. The teacher and the teacher educator would typically talk several times at length before the session about the data and the focus question. The intention here was to find data that was rich enough, and a question that was generative enough to stimulate a lengthy and interesting discussion. We were planning a day's curriculum for the group.

Ana, a first and second grade teacher who was the focus person here, had two clear questions: 1) the nature of student discourse and her role in facilitating it; and 2) how to increase participation especially among students who tended to be silent. Both of these questions were of interest to the group—they had been discussed several times in the past in different ways.

Ana also had more or less clear data, in this case three conversations which represented different experiments in facilitating discourse in order to include students' voices in the discussion. In the first conversation, Ana paraphrased almost every students' statement, but found this dissatisfying because, "It didn't give me a lot of understanding of what kids really understood, what their thinking was." In the second conversation, she had more focused questions and worked hard *not* to paraphrase. We had a quasi-transcript—detailed field notes, really—of this conversation which we distributed to the members of the group. Finally, Ana reported on a third conversation in which she asked students to reflect on their own about the ideas of the conversation before it started.

Yet even with interesting questions (albeit two, *separate*, interesting ones) and clear data, it was difficult to clearly frame and launch the discussion for the group. Several minutes were spent describing the different data, paraphrasing the focal questions, and essentially publicly negotiating the focus of the discussion. Even as the discussion progressed, different members of the group shifted and refocused the conversation.

As the teacher educator, I was left wondering how to decide which of these questions and tangents was more generative; which would lead us to link specific classroom actions with deeper understanding about implications for teaching and learning; and what kinds of moves I, and others, could make to refocus the discus-

sion when needed. My sense was that by attending to the observable effects of specific actions, we could focus on what was going on in Ana's head at the time and the reasons for or implications of her decisions, rather than starting with hypothetical "What if you had tried this?" kinds of statements.

Yet an extended digression into the effects of students' family background on their participation—a teacher's move which at first seemed to be getting us off topic—also generated hypotheses, counter-examples, and some interesting analysis. What criteria can we use to predict whether a question or focus will move us to the middle ground? How important is the initial data? What are the features of the question itself? What moves can serve to shift the focus to this middle ground? It's interesting that the group decided to continue meeting monthly into the fall of 1995, and asked for help developing skills to focus conversations and keep them focused.

While negotiating a focus happens both before *and* during an inquiry group session, the other issues tend to arise primarily *in* the session itself. I will present a single, extended excerpt from one conversation to illustrate them. This excerpt occurred just a few minutes after the group had read Ana's quasi-transcript, roughly one-third of the way through the entire conversation.

Rhonda:	And I too have the same problem you have which is paraphrasing for them. And I really make that effort not to do that.
Jim:	So let's see. It would be interesting to look through this and see how often Ana said, "Why?" and what kinds of responses did she get from that. How often did she paraphrase for kids? How often did she ask kids to paraphrase?
Rhonda:	I don't think you paraphrased at all.
Jim:	So let's hear other people.
Kathy:	Line 46. "So what Larry is saying...," and then you drop it. So that somebody...
Jim:	Or I didn't write it down...
Kathy:	Well, I like to think that you (laughter) started the question and then...
Ana:	I think I did...Yeah. Like Amelia was saying last time that she caught herself starting and then catch herself. "OK, wait a minute, I shouldn't be doing this," and then let somebody else do it.
Kathy:	I didn't even think that you caught yourself. I thought that you were just giving the kids a lead in. You know it's another way of saying...
Jim:	Oh, that's interesting...
Ana:	Either one could be. [Others: Right. Uh-huh.] Cause I do do that too, sometimes. I'm not sure what I did on this occasion—whether I caught myself or if it was a lead in...
Kathy:	I don't think it's ever a bad [inaudible].

Jim: Well in some ways that's a way of asking for a paraphrase. You can do it in that way. "So what Larry is saying..." It could be a fill in the blank by paraphrasing.

Kathy: Also the, "Can you...?" Asking kids...I was talking to [inaudible] about it... I just have words... I can't ask a question like that in my room cause kids will say, "No I can't." So I say, "We need a volunteer to...." Or, "we need somebody to try to blah blah blah."

Jim: So you're looking at line 32 or 34?

In this excerpt, teachers ground their statements not only in the specific shared data in front of them—in this case the quasi-transcript (lines 3-5, 8, 29)—but also in their own classroom experiences and stories (lines 1 and 25–28). These stories may serve to "validate" the data in teachers' own experiences, and to provide supporting and sometimes disconfirming evidence for the hypotheses drawn from data (see Carter, 1993). As teachers develop this form of discourse, it will continue to be interesting to pursue how they view these different types of data. Is evidence from outside used to dismiss conclusions that might otherwise seem clear from the shared data? Does it provide the context needed to make the experiences seem more realistic and practical? Does it serve as the basis for generating alternative hypotheses? What other purposes does it serve?

Several alternative hypotheses are proposed to explain a piece of the data in this excerpt—in this case, the phrase "So what Larry is saying..." This was interpreted variously as someone interrupting to explain Larry's thinking (lines 8–9); incomplete data (line 10); Ana catching herself in the middle of a paraphrase (lines 12–14); "giving kids a lead in" (lines 15–16); and a subtle way of asking for a paraphrase (lines 22–24). Several of these were accepted as possible by Ana. Developing alternative hypotheses to explain teacher moves is a crucial piece of developing a critical frame of mind about teaching. It also expands a teacher's potential repertoire of actions. Yet this is often difficult to accomplish—mainstream teaching culture still reinforces teachers when they evaluate others' teaching, or when they give suggestions. (Lortie, 1975) What would encourage more of this kind of hypothesis generating behavior? What effects does it have on actual teaching practice?

People in the group often reflect on our own experiences together, and even on our own conversation, to provide examples for the discussion. In this excerpt, Ana refers back to a previous week's conversation (line 12) saying, "Like Amelia was saying last time..." Later in the session, Kathy points to something Jim had said earlier in that very conversation as an example of asking for a paraphrase in a more directive way.

Kathy: Well you do it. You did it just now. "Say more about that." Instead of, "Can you say more about that?"

This kind of reflecting back on our own conversation is interesting. How might it serve to help teachers find data relevant to teaching in a wider variety of situations? How might it be linked to the development of the self-reflectivity

needed to publicly develop criteria for behavior and a culture that will make the group self-sufficient in the long-run? What other functions does it serve?

Creating a community of discourse about teaching that links particulars of classroom practice to theory-building is a complex endeavor. Many questions remain about the nature of this discourse, the role of teacher educators in facilitating the creation of this discourse, and the skills and knowledge teachers need to sustain such discourse in the long-term.

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